

EXERCÍCIO PRÁTICO 7

LISTA 07

01 → 5B 1EE7544E3M

0101 1011

m = 1,011

e = 11 - 7 = 4

$$\left(\begin{array}{l} 1,011 \cdot 2^4 \\ 1,011 \cdot 2^1 \end{array} \right) \rightarrow 10110 \cdot 2 \rightarrow 22$$

9,25

1001

$$\begin{aligned} 0,25 \times 2 &= 0,50 \\ 0,50 \times 2 &= 1,00 \end{aligned}$$

9,25

1001,01

$$\sim 1,00101 \times 2^3$$

normalizado

$$1,00101 \cdot 2^3$$

$$E = 3 + 7 = 10$$

SINAL: 0

EXPONENTE: 1010

MANTISSA: 001

$$\rightarrow 01010001$$

02 → a1 803ACABA

S EX M

1000 0000 0011 1010 1100 1010 1011 1010

$$P_{\text{real}} = M_{\text{mag}} - \text{BIAS}$$

S = 1

EX = 0000 0000

M = 011 1010 1100 1010 1011 1010

BIAS = 127

Normalizado

$$M_{\text{real}} = L - 127$$

$$M_{\text{real}} = -126$$

$$0,01110101100101010111010 \times 2^{-126}$$

$$-0,455048125 \cdot 2^{-126} \approx -5,399183 \cdot 10^{-39}$$

BI 803ACABA 00000000

1000 0000 0011 1010 1100 1010 1101 1010 0000

S=1

$M_{\text{rem}} = 3 - 1023 \sim -1020$

E = 000 0000 0011

M = 0, 1010110010101011010 0000 ...

BIPS = $2^{10} - 1 \sim 1023$

0,1010110010101011010 0000 0000 0000 0000 0000 0000 0000 0000
• 2^{-1020}

$$1,674493789 \times 2^{-1020} \int 1,4903 \times 10^{-307}$$

03 → al 14125

0011 0111 0010 1110

S=0

0,1011100101110 • 2^{13}

BIPS = 127

$M_{\text{rem}} = M_{\text{mag}} - \text{BIPS} \sim M_{\text{mag}} = 13 + 127 \sim M_{\text{mag}} = 140$

01000 1100 1011100101110000000000121
0x 463CB400

b1 - 58345

Bias = 127

1110 0100 0000 0111

$1,1100100\ 00000111 \cdot 2^{15}$

$M_{rem} = M_{mag} - Bias \rightarrow 15 = M_{mag} - 127 \rightarrow M_{mag} = 142$

11000 1110 1100100 00000111 00000000₁₂₁
0x C9640700

04-a) 0 1000 0001 0110 0000 0000 0000 0000 0000

S = 0

Bias = 127

$M_{rem} = 129 - 127$

$M_{mag} = 1000\ 0001$

$M_{rem} = 2$

$1,011 \cdot 2^2 \approx 101,1 \approx 5,5$

b) 1 1000 0001 0001

S = 1

Bias = 127

$M_{mag} = 1000\ 0001$

$0 + 1 \cdot 2^{-2}$
 $0 \times 2^{-1} + 1 \times 2^{-2}$

$M_{rem} = 129 - 127 = 2$

$1,0001 \cdot 2^2 \approx 100,01$ $\int^{\circ} = 4,25$

05 → 7F7FF800

0111 1111 0111 1111 1111 1000 0000 0000

$2,11111111011111111111100000000000 \cdot 2^{30}$

S=0

$M_{\text{mag}} = 11111110 \sim 254$

$M_{\text{rem}} = 254 - 127 = 127$

Bias = 127

$1,111111111111100000000000 \cdot 2^{127}$

a
c
b

b) D57F0000

número negativo

1101 0101 0111 1111 0000 0000 0000 0000

$2,10101010111111110000000000000000 \cdot 2^{30}$

S=1

$M_{\text{mag}} = 10101010 \sim 170$

$M_{\text{rem}} = 170 - 127 = 43$

$2,10101010111111110000000000000000 \cdot 2^{43}$

d) 5F7FF800

0101 1111 0111 1111 1111 1000 0000 0000

$2,0111110111111111100000000000 \cdot 2^{30}$

$M_{\text{mag}} = 1011110 \sim 190 - 127 = 63$

$2,01111111111111111111111111111111 \cdot 2^{63}$

REAL $112 * 0,224 = 25,088$

REPRESENTAÇÃO

$112 * 0,1875 = 21$

ERRO ABSOLUTO $4,088$

ERRO RELATIVO $\frac{4,088}{25,088} \approx 0,16294$

REAL $112 + 0,224 = 112,224$

REPRESENTAÇÃO

$112 + 0,1875 = 112,1875$

ERRO ABSOLUTO $0,0365$

ERRO RELATIVO $\frac{0,0365}{112,224} \approx 3,252423$

07- 112

0,224

$1,11000 \cdot 2^6$

$1100110011 \cdot 2^{-3}$

GR: $2^2 - 1 = 3$

GR: $= 3$

Mag: $6 + 3 = 9 = 1001$

Mag: $= 0$

01001100

00001101

Mag: $= 4$

$1,1100 \cdot 2^1$

rem: $1 - 3 = 2$

GR: $4 - 3 = 1$

$11,00 = 3$

$1,1101 \cdot 2^{-2}$

$0,011101 \rightarrow 0,25 + 0,125$
 $\approx 0,453125$

ERRO ABSOLUTO:

ERRO RELATIVO

$$\text{SOMA: } 12,224 - 3,453125 \\ 108,77$$

$$\text{SOMA: } 0,969$$

$$\text{MULTIPLICAÇÃO: } 25,088 - 1,3593 \\ 23,7287$$

$$\text{MULTIPLICAÇÃO: } 0,9457$$